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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,319	07/14/2006	Mikio Inoue	VPM-00701	1839

26339 7590 04/01/2010
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EXAMINER	
HICKS, CHARLES V	

ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
04/01/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/586,319	INOUE, MIKIO	
	Examiner	Art Unit	
	CHARLES HICKS	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 January 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4,6,7,12,13 and 15-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4, 6-7,12,13 and 15-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This communication is responsive to amendments filed 01/29/2010. Claims 1-3, 5, 8-11 and 14 are cancelled. Claims 4, 6, 7 and 15 are amended. Claims 4, 6-7, 12-13 and 15-18 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4, 6, 7, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rafii et al. (6,614,422) in view of Kloba (US 7,263,547).

In reference to claim 4, Rafii teaches a mobile communication terminal (Rafii, Fig. 1A, 80), comprising:

image projection means for projecting a selected one of a plurality of predefined operation-plane images that displays virtually an operation-plane of an operation device operated by users (Rafii, Fig. 1A, 145; col. 4, ll. 27-33);

operation detection means for detecting operation on the operation-plane image projected by the image projection means (Rafii, Fig. 1A, 20; col. 10, ll. 27-34);

data processing means for performing a predetermined data process based on the detection result of operation detected by the operation detection means (Rafii, Fig. 3; col. 7, ll. 16-18);

wherein an application execution management means selects the selected one of the plurality of predefined operation-plane images for projection according to content of an application program and generates designation information that designates a recognition function corresponding to the selected predefined operation-plane image (Rafii, Fig. 1A,145; col. 4, ll. 27-33; Fig. 1A, 20; col. 10, ll. 27-34);

wherein the image projection means projects the selected predefined operation-plane image corresponding to the recognition function designated by the designation information received from the application execution management means, from among the plurality of predefined operation-plane images (Rafii, col. 4, ll. 27-33; projection of a grid or image);

and wherein the operation detection means has a plurality of kinds of mutually different recognition functions to recognize operation content by at least one of position, direction and movement of an operation object on the plurality of predefined operation-plane images (Rafii, col. 12, ll. 33-47),

and detects operation on the operation-plane image by using the recognition function designated by the designation information received from the application execution management means (Rafii, col. 10, ll. 27-34).

Rafii however fails to teach the application execution management means for managing application program execution environment of an application program

selected from a plurality of application programs that is downloaded via a mobile communication network.

Kloba discloses a system for customizing content on a mobile device, analogous in art with that of Rafii, containing application execution management means for managing application program execution environment of an application program selected from a plurality of application programs that is downloaded via a mobile communication network (Kloba, col. 4, ll. 37-41; col. 7, ll. 5-9; col. 11, ll. 15-21).

At the time the invention was made, it would have been obvious to one having ordinary skill in the art to modify the mobile communication terminal of Rafii to include application execution management means for managing application program execution environment of an application program selected from a plurality of application programs that is downloaded via a mobile communication network, as taught by Kloba.

As one of ordinary skill in the art would appreciate, the suggestion/motivation for doing so would have been to enable the user to run multiple applications on a mobile device while on-line or off-line (Kloba, col. 1, ll. 36-39).

In reference to claim 6, Rafii teaches a mobile communication terminal (Rafii, Fig. 1A, 80), comprising:

image projection means for projecting a selected one of a plurality of predefined operation-plane images that displays virtually an operation-plane of an operation device operated by users (Rafii, Fig. 1A, 145; col. 4, ll. 27-33);

operation detection means for detecting operation on the operation-plane image projected by the image projection means (Rafii, Fig. 1A, 20; col. 10, ll. 27-34);

data processing means for performing a predetermined data process based on the detection result of operation detected by the operation detection means (Fig. 3; col. 7, ll. 16-18);

wherein an application execution management means selects the selected one of the plurality of predefined operation-plane images for projection according to content of an application program and generates designation information that designates a recognition function corresponding to the selected predefined operation-plane image (Rafii, Fig. 1A,145; col. 4, ll. 27-33; Fig. 1A, 20; col. 10, ll. 27-34);

wherein the image projection means projects the selected predefined operation-plane image corresponding to the recognition function designated by the designation information received from an application execution management means, from among the plurality of predefined operation-plane images (Rafii, col. 4, ll. 27-33; projection of a grid or image);

and wherein the operation detection means has a plurality of kinds of mutually different recognition functions to recognize operation content by at least one of position, direction and movement of an operation object on the plurality of predefined operation-plane images (Rafii, col. 12, ll. 33-47),

and detects operation on the operation-plane image by using the recognition function corresponding to the operation-plane image designated by the designation

information received from the application execution management means (Rafii, col. 10, l. 27-34).

Rafii however fails to teach application execution management means for managing execution environment of an application program selected from a plurality of application programs that is downloaded via a mobile communication network.

Kloba discloses a system for customizing content on a mobile device, analogous in art with that of Rafii, containing application execution management means for managing execution environment of an application program selected from a plurality of application programs that is downloaded via a mobile communication network (Kloba, col. 4, ll. 37-41; col. 7, ll. 5-9; col. 11, ll. 15-21).

At the time the invention was made, it would have been obvious to one having ordinary skill in the art to modify the mobile communication terminal of Rafii to include application execution management means for managing execution environment of an application program selected from a plurality of application programs that is downloaded via a mobile communication network, as taught by Kloba.

As one of ordinary skill in the art would appreciate, the suggestion/motivation for doing so would have been to enable the user to run multiple applications on a mobile device while on-line or off-line (Kloba, col. 1, ll. 36-39).

In reference to claim 7, Rafii teaches a mobile communication terminal (Rafii Fig. 1A, 80), comprising:

image projection means for projecting a selected one of a plurality of predefined operation-plane image that displays virtually an operation-plane of an operation device operated by users (Rafii, Fig. 1A, 145; col. 4, ll. 27-33);

operation detection means for detecting operation on the operation-plane image projected by the image projection means (Rafii, Fig. 1A, 20; col. 10, ll. 27-34);

data processing means for performing a predetermined data process based on the detection result of operation detected by the operation detection means (Fig. 3; col. 7, ll. 16-18);

memory means for storing a plurality of image data corresponding to each one of the plurality of predefined operation-plane images (Rafii, col. 12, ll. 48-53);

wherein an application execution management means selects the selected one of the plurality of predefined operation-plane images for projection according to content of an application program and generates designation information that designates a recognition function corresponding to the selected predefined operation-plane image (Rafii, Fig. 1A,145; col. 4, ll. 27-33; Fig. 1A, 20; col. 10, ll. 27-34);

and instruction generation means for generating an operation-plane image selection instruction in accordance with the content of the selected application program (Fig. 3; col. 7, ll. 16-18);

wherein the image projection means selects an image data from the plurality of image data memorized in the memory based on the operation-plane image selection instruction generated by the instruction generation means, and projects the operation-

plane image of the selected image data (Rafii, col. 4, ll. 27-33; projection of a grid or image);

and wherein the application execution management means performs a data process corresponding to operation detected by the operation detection means in accordance with the content of the application program during execution of the selected application program and in accordance with the designation information that designates the recognition function (Rafii, col. 10, ll. 27-34) .

Rafii however fails to teach application execution management means for executing an application program selected from a plurality of kinds of application programs that is downloaded via a mobile communication network.

Kloba discloses a system for customizing content on a mobile device, analogous in art with that of Rafii, containing application execution management means for executing an application program selected from a plurality of kinds of application programs that is downloaded via a mobile communication network (Kloba, col. 4, ll. 37-41; col. 7, ll. 5-9; col. 11, ll. 15-21).

At the time the invention was made, it would have been obvious to one having ordinary skill in the art to modify the mobile communication terminal of Rafii to include application execution management means for executing an application program selected from a plurality of kinds of application programs that is downloaded via a mobile communication network, as taught by Kloba.

As one of ordinary skill in the art would appreciate, the suggestion/motivation for doing so would have been to enable the user to run multiple applications on a mobile device while on-line or off-line (Kloba, col. 1, ll. 36-39).

In reference to claim 15, Rafii teaches a mobile communication terminal (Rafii, Fig. 1A, 80), comprising:

an image projector that projects a selected one of a plurality of predefined operation-plane images that displays virtually an operation-plane of an operation device (Rafii, Fig. 1A, 145; col. 4, ll. 27-33);

an operation detector that detects operation on the operation-plane image projected by the image projector (Rafii, Fig. 1A, 20; col. 10, ll. 27-34);

a data processor that performs a predetermined data process based on the detection result of operation detected by the operation detector (Rafii, Fig. 3; col. 7, ll. 16-18);

wherein an application execution management means selects the selected one of the plurality of predefined operation-plane images for projection according to content of an application program and generates designation information that designates a recognition function corresponding to the selected predefined operation-plane image (Rafii, Fig. 1A,145; col. 4, ll. 27-33; Fig. 1A, 20; col. 10, ll. 27-34);

wherein the image projector projects an operation-plane image corresponding to the recognition function designated by the designation information received from an

application execution management device, from among the plurality of predefined operation-plane images (Rafii, col. 4, ll. 27-33; projection of a grid or image);

and wherein the operation detector has a plurality of kinds of mutually different recognition functions to recognize operation content by at least one of position, direction and movement of an operation object on the plurality of predefined operation-plane images (Rafii, col. 12, ll. 33-47),

and detects operation on the operation-plane image by using the recognition function designated by the designation information received from the application execution management device (Rafii, col. 10, ll. 27-34).

Rafii however fails to teach an application execution management device that manages an execution environment of an application program selected from a plurality of application programs that is downloaded via a mobile communication network.

Kloba discloses a system for customizing content on a mobile device, analogous in art with that of Rafii, containing application execution management device that manages an execution environment of an application program selected from a plurality of application programs that is downloaded via a mobile communication network (Kloba, col. 4, ll. 37-41; col. 7, ll. 5-9; col. 11, ll. 15-21).

At the time the invention was made, it would have been obvious to one having ordinary skill in the art to modify the mobile communication terminal of Rafii to include an application execution management device that manages an execution environment of an application program selected from a plurality of application programs that is downloaded via a mobile communication network, as taught by Kloba.

As one of ordinary skill in the art would appreciate, the suggestion/motivation for doing so would have been to enable the user to run multiple applications on a mobile device while on-line or off-line (Kloba, col. 1, ll. 36-39).

Claim 18 is rejected as being dependent on rejected claim 15 as discussed above and further, Rafii teaches further comprising: a memory that stores the plurality of predefined operating-plane images (Rafii, col. 12, ll. 48-53).

Claims 12, 13, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rafii et al. (6,614,422) as modified by Kloba (US 7,263, 547) and further in view of Lieberman (US 2002/0075240).

Claim 12 is rejected as being dependent on claims 4, 6, or 7 as discussed above and further, Rafii modified by Kloba fails to teach a mobile communication terminal wherein the mobile communication terminal is configured by using a light source, a spatial light modulation unit for modulating light output from the light source, and an optical system for projection imaging that projects by imaging a light image output from the spatial light modulation unit on an external projection screen, the mobile communication terminal comprises an optical system for diffused illumination for homogenously illuminating by diffusing light output from the light source to an external illumination plane, and the light source and the spatial light modulation unit are both

shared to generate a light image subject to projection and generate a light subject to diffused illumination.

Lieberman discloses a virtual data entry device, analogous in art with that of Rafii modified by Kloba, wherein the mobile communication terminal is configured by using a light source, a spatial light modulation unit for modulating light output from the light source, and an optical system for projection imaging that projects by imaging a light image output from the spatial light modulation unit (Lieberman, Fig. 28; pg. 10, par. 184) on an external projection screen (Lieberman, Fig. 29; pg. 10, par. 186),

the mobile communication terminal comprises an optical system for diffused illumination (Lieberman, pg. 10, par. 184) for homogenously illuminating by diffusing light output from the light source to an external illumination plane (Lieberman, Fig. 28),

and the light source and the spatial light modulation unit are both shared to generate a light image subject to projection and generate a light subject to diffused illumination (Lieberman, pg. 6, par. 135; light source is a single laser source).

At the time the invention was made, it would have been obvious to one having ordinary skill in the art to modify the mobile communication terminal of Rafii modified by Kloba wherein the mobile communication terminal is configured by using a light source, a spatial light modulation unit for modulating light output from the light source, and an optical system for projection imaging that projects by imaging a light image output from the spatial light modulation unit on an external projection screen, the mobile communication terminal comprises an optical system for diffused illumination for homogenously illuminating by diffusing light output from the light source to an external

illumination plane and the light source and the spatial light modulation unit are both shared to generate a light image subject to projection and generate a light subject to diffused illumination, as taught by Lieberman.

As one of ordinary skill in the art would appreciate, the suggestion/motivation for doing so would have been to provide an expanded input device for a small sized PDA or cell phone (Lieberman, pg. 1, par. 9).

Claim 13 is rejected as being dependent on rejected claim 12 as discussed above and further Rafii teaches a mobile communication terminal, the mobile communication terminal comprising (Rafii, Fig. 1A, 80):

a camera unit that generates image data by transforming the light image to electric signals (Rafii, col. 2, ll. 21-36);

and an optical system for camera imaging for imaging the light image subject to shooting on the camera unit (Rafii, col. 2, ll. 21-57);

wherein the operation detection means is configured by using operation object detection means for detecting at least one of position, direction, and movement of an operation object operating on the operation-plane image and operation detection data generation means for generating operation detection data corresponding to position, direction or movement of the operation object based on the detection results of the operation detection means (Rafii, col. 2, ll. 21-57);

and the camera unit and the optical system for camera imaging are both shared as the operation object detection means (Rafii, col. 2, ll. 21-57).

Claim 16 is rejected as being dependent on rejected claim 15 as discussed above and further Rafii modified by Kloba fails to teach a mobile communication terminal wherein the mobile communication terminal is configured by using a light source, a spatial light modulation unit for modulating light output from the light source, and an optical system for projection imaging that projects by imaging a light image output from the spatial light modulation unit on an external projection screen, the mobile communication terminal comprises an optical system for diffused illumination for homogenously illuminating by diffusing light output from the light source to an external illumination plane, and the light source and the spatial light modulation unit are both shared to generate a light image subject to projection and generate a light subject to diffused illumination.

Lieberman discloses a virtual data entry device, analogous in art with that of Rafii modified by Kloba, wherein the mobile communication terminal is configured by using a light source, a spatial light modulation unit for modulating light output from the light source, and an optical system for projection imaging that projects by imaging a light image output from the spatial light modulation unit (Lieberman, Fig. 28; pg. 10, par. 184) on an external projection screen (Lieberman, Fig. 29; pg. 10, par. 186),

wherein the mobile communication terminal comprises an optical system for diffused illumination (Lieberman, pg. 10, par. 184) for homogenously illuminating by diffusing light output from the light source to an external illumination plane (Lieberman, Fig. 28),

and wherein the light source and the spatial light modulation unit are both shared to generate a light image subject to projection and generate a light subject to diffused illumination (Lieberman, pg. 6, par. 135; light source is a single laser source).

At the time the invention was made, it would have been obvious to one having ordinary skill in the art to modify the mobile communication terminal of Rafii modified by Kloba wherein the mobile communication terminal is configured by using a light source, a spatial light modulation unit for modulating light output from the light source, and an optical system for projection imaging that projects by imaging a light image output from the spatial light modulation unit on an external projection screen, wherein the mobile communication terminal comprises an optical system for diffused illumination for homogenously illuminating by diffusing light output from the light source to an external illumination plane and wherein the light source and the spatial light modulation unit are both shared to generate a light image subject to projection and generate a light subject to diffused illumination, as taught by Lieberman.

As one of ordinary skill in the art would appreciate, the suggestion/motivation for doing so would have been to provide an expanded input device for a small sized PDA or cell phone (Lieberman, pg. 1, par. 9).

Claim 17 is rejected as being dependent on rejected claim 16 as discussed above and further Rafii teaches a mobile communication terminal, the mobile communication terminal comprising (Rafii, Fig. 1A, 80):

a camera unit that generates image data by transforming the light image to electric signals (Rafii, col. 2, ll. 21-36);

and an optical system for camera imaging for imaging the light image subject to shooting on the camera unit (Rafii, col. 2, ll. 21-57);

wherein the operation detector is configured by using an operation object detector that detects at least one of position, direction, and movement of an operation object operating on the operation-plane image and operation detection data generator that generates operation detection data corresponding to position, direction or movement of the operation object based on the detection results of the operation object detector (Rafii, col. 2, ll. 21-57);

and the camera unit and the optical system for camera imaging are both shared as the operation object detector (Rafii, col. 2, ll. 21-57).

Response to Arguments

On page 17 of applicant's response, applicants argue that the cited prior art of reference does not teach or fairly suggest a system that operates according to an application execution management means that selects an appropriate predefined operation plane image, and generates designation information.

Rafii teaches an application execution management means (Rafii, Fig. 1A; col. 4, ll. 8-33; col. 4, ll. 51-67), that selects an appropriate predefined operation plane image (Rafii, Fig. 1A; col. 4, ll. 8-33; col. 12, ll. 48-53), and generates designation information (Rafii, Fig. 1A; col. 4, ll. 8-33).

Rafii discloses a method and apparatus for entering data using a virtual input device, and including a signal processing unit, central processor, and a memory storing programs executed by the signal processing unit CPU, such that three-dimensional positional information is received from locations on a predefined operation plane image and converted into format data compatible as device input (Rafii, Fig. 1A; col. 4, ll. 8-33; col. 4, ll. 51-67).

Therefore, Rafii teaches a system that operates according to an application execution management means that selects an appropriate predefined operation plane image, and generates designation information.

Applicants further argue on page 18 of applicant's response that the cited prior art of record does not teach application management of a plurality of predefined operation-plane images on a communications terminal.

Rafii discloses a plurality of predefined operation-plane images (Rafii, col. 4, ll. 13-33; col. 8, ll. 7-24).

Rafii teaches pre-defined operation plane images such as a keyboard, grid or blank image (Rafii, Fig. 1A and 1B; col. 4, ll. 13-33), virtual keyboards consisting of alternate key sets, such as for different languages (Rafii, col. 8, ll. 7-24) and keys laid out in differing matrix patterns (Rafii, col. 7, ll. 64-col. 8, ll. 1).

Therefore, Rafii teaches application management of a plurality of predefined operation-plane images on a communications terminal.

Applicants also argue on page 18-19 of applicants response that the cited prior art of record fails to disclose execution management of predefined operation-plane images used with programs that are downloaded via a mobile communications network, and that there is no reason to combine the prior art references of Rafii and Kloba.

Rafii teaches execution management of predefined operation-plane images used with programs as discussed above. Kloba discloses a system for customizing content on a mobile device, by downloading programs to use with the execution management of the mobile device (Kloba, col. 4, ll. 37-41; col. 7, ll. 5-9; col. 11, ll. 15-21). Kloba discloses technology for using applications on mobile devices that interact with the Internet or with intranets. The invention of Kloba enables applications available to run on mobile devices and includes software and methods for managing variables relevant to the mobile device (Kloba, col. 4, ll. 37-44).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the mobile device of Rafii to interact with programs that

are downloaded via a mobile communications network. Kloba teaches the well known use of the internet to download programs to enable a user to run multiple applications on a mobile device, (Kloba, col. 1, ll. 36-39).

Therefore Rafii as modified by Kloba teaches execution management of predefined operation-plane images used with programs that are downloaded via a mobile communications network.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHARLES HICKS whose telephone number is 571-270-7535. The examiner can normally be reached on Monday-Thursday from 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz, can be reached on 571-272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sumati Lefkowitz/
Supervisory Patent Examiner, Art Unit 2629